



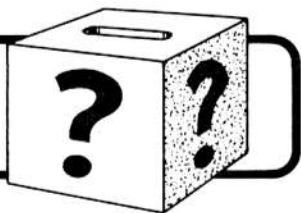
# NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 6, No. 19

October 2, 1975

## QUESTION BOX



If you have questions on company policy, write the Editor, Nuclear Division News (or telephone your question in, either to the Editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

**QUESTION:** I would like to know why the \_\_\_\_\_ Division employees are allowed to take sick and personal leave and vacation and not have it shown in any way on their time cards. This has amounted to four hours on many occasions and the person is weekly. In my department you have to report even five minutes away from the job.

**ANSWER:** All scheduled work hours must be accounted for on the time distribution cards of weekly personnel. The practice you describe would not be proper. We believe there must be some misunderstanding. If you could advise your management of specific dates and identification, the matter will be investigated.

**QUESTION:** Can Carbide safety officials do something about the drivers headed for Knoxville (on Bethel Valley Road) at 4:30 p.m. who speed along the left outgoing lane and then sneak in at the front of the right-hand lane and almost cause someone in that lane to have a wreck?

**ANSWER:** Since the section of three-lane Bethel Valley Road south of the Oak Ridge Memorial Park Cemetery is a public highway, Carbide has no jurisdiction over traffic control. As a result of your question, we have called this matter to the attention of the Oak Ridge Police Department. Perhaps some of

the persons who are referred to are readers of this column. If so, we would suggest that they slow down and stay in the proper lane.

Practicing the principles of safe defensive driving which are taught in special plant training courses and in safety meetings will help to counteract the reckless driving of others.

**QUESTION:** Why is it that the Guard Department at K-25 never gets the good vehicles when they have to drive 24 hours a day? Most of the new vehicles and the better ones are assigned to departments that only use them an hour or so a day. Then when new vehicles come in, the older ones are passed on to the Guard Department, and the new ones go to these other departments.

**ANSWER:** Generally the newest vehicles, such as sedans, are assigned to departments that require traveling off the plant area where speeds exceed intraplant driving. For the past year it has been necessary for many areas, including the Guard Department, to drive older vehicles due to the unusually long delivery time for new ones. Eighteen new units were received in July and have been assigned, including several late models, to the Guard Department. Twenty additional new passenger vehicles are on order.

(Continued on page 8)

## United Way campaign opens in Paducah, Oak Ridge area

United Way campaigns have been kicked off at both the Oak Ridge plants and Paducah.

The Oak Ridge drive was kicked off yesterday with Plant and drive officials at the Oak Ridge Civic Center. Attending were all Plant chairmen, treasurers, publicity coordinators, solicitors and other Nuclear Division United Way staff persons.

Opening remarks and introductions were made by John Arendt, UW general chairman for the three Oak Ridge installations. The position statement, giving management endorsement to the drive, was made by Roger F. Hibbs, UCC-ND President. Installation management's endorsement was made by Herman Postma, Director of Oak Ridge National Laboratory.

Special speakers included Byrd Duncan, Briceville Health Center, who was the star of last year's program, emphasizing the impact that the Center has had on that mining town in Anderson County. Clarence Lay, who recently retired from the Oak Ridge Gaseous Diffusion Plant to devote full time to efforts in behalf of the mentally retarded in the state, described the vital work being done at the Michael Dunn Rehabilitation Center, Kingston.

### Special speakers

Nuclear Division speakers included Douglas Fain, ORGDP, who described the Sheltered Workshop in Oak Ridge; Wilbert Minter, Y-12, who emphasized employee partici-

pation in a united effort; and Joy Huffstetler, ORNL, and a former professional worker with the Campfire Girls, stressed just how prudently UW agencies are allocated money. She also cited the appreciation of the agencies for volunteer help.

The announced goal for the Oak Ridge ND plants is \$485,000 ... to be distributed over a five-county area where funds will go to Anderson, Knox, Roane, Morgan and Loudon counties. Anderson has established a goal of \$407,000 ... Knox, \$1,813,760, Roane, \$90,000; Morgan, \$11,800; and Loudon \$51,640.

Bill Penry, chairman for the Paducah Plant's United Way drive, confessed that the Kentuckians "jumped the gun" a little this year, getting their drive underway about two weeks ago. Penry voiced enthusiasm over this year's prospects and says he expects final figures for the entire plant at the end of this week, or the first of next. "It all depends on how many vacationers we missed," he mused. "This year's drive took less effort than most. It's because of all the fine solicitors in the Plant. They got their material and went to work."

### Y-12 new efforts

Most of the safety meetings in the Oak Ridge plants will concentrate on the United Way during October. A special training session began in the Y-12 Plant earlier this week, giving solicitors the proper tools with which to conduct the drive. Julie Dorsey and Ed Owings were instructors in this effort, a new approach for Y-12.

(4725 Pad)



**DIVISION DIRECTORS** — Special directors from the divisions at the Paducah Plant will correlate this year's United Appeal drive. Seated from left are Bill D. Penry, chairman; Nita Bauer, Pat Karr, A. D. English, substituting for Gene White, and Larry M. Case. Standing are Don Stitt, J. O. Dobson, Elvin Kuehn, Ken Carpenter, A. Rodgers and J. B. Thomason.

### IN THIS ISSUE

Low temperature energy resource research ..... page 2

Cancer Research Center .. page 3

Stansberry named Paducah department head ..... page 3

Motion picture capabilities ..... page 4

Dr. Lincoln ..... page 7



# Energy availability from low-temperature resources

By Robert Wesley

The Reactor and Energy Divisions of Oak Ridge National Laboratory are involved in cooperative studies to determine how energy may be extracted more efficiently from low-temperature resources.

The studies known as the Cold Vapor Program, are headed by Richard N. Lyon of the Energy Division, with Stanley Milora and Stephen Combs of the Reactor Division's heat transfer and fluid dynamics department providing technical support.

According to Lyon, the nation has a number of available thermal sources, such as warm springs under 150° C, that could be tapped to produce electric power if ways of increasing the heat transfer efficiency from such sources to the power generating turbine can be developed.

Most of the nation's power-generating plants operate at temperatures over 200° C (modern combustion power plants operate at about 500 to 537° C), with the heat from the fuel source being used to make steam to drive turbines to produce electricity. Power generating systems which have a lower temperature heat source have some severe limitations that present technical and economic obstacles, Lyon said. "The basic problem," he explained, "is that low temperature heat sources require larger heat exchange equipment. The capital cost of building larger components to utilize low heat sources presently outweighs the advantage of the power extracted."

## Other fluids used

There are several approaches that can be taken in attacking the problem, Lyon said. One way is the use of heat transfer fluids other than water. Such fluids as halogenated hydrocarbons, usually referred to as Freons and known for their coolant abilities, and ammonia might make

low-temperature power systems more feasible. Ammonia, for example, boils at minus 33.3° C and carries much more heat per cubic foot in its vapor than low-temperature steam. Vapors of such fluids could thus achieve the same purpose as steam in driving turbines, but the turbine and piping would be much smaller than corresponding steam equipment.

The heat transfer problem can be alleviated through the application of new tubing configurations that augment the heat transfer process by increasing the rate of condensation. It is known, for example, that surface tension forces can be used to influence the thickness of the thin film of condensed, partially insulating liquid on a tube surface through modifying the surface configurations to an optimum design.

## Systems will improve

Describing this work, Lyon said: "Our tubing surface shape development effort draws on earlier studies from the Laboratory's distillation desalting program where we found, following pioneering work in Switzerland, that surfaces can be shaped to allow the surface tension of the condensate into specified vertical drainage regions. Our experiments already have shown improvements by a factor of two in condensing heat transfer, which suggests related reductions in the cost of heat exchangers in low-temperature power-production equipment. Our theoretical analyses indicate the possibility of much greater improvement when we obtain tubes made to our specification."

The use of different heat transfer fluids and tubing configurations to achieve greater efficiency in the heat transfer process is being evaluated in an experimental apparatus located in the Y-12 Plant. The rig, principally designed and operated by Combs, is

used to measure condensing heat transfer in Freons and other nonflammable fluids that boil at low temperatures on tubing of different surface configurations. Experiments with the device began in May.

Tube sections being tested are 1-in. in diameter and 4-ft. in length. A typical experiment, usually conducted over an 8-hour period, consists of heating electrically a heat transfer medium (such as Freon-114) to boiling temperatures (in this case about 37° C). The resulting vapor flows outside the tubing specimen under test, while colder water passes through the inside of the tube to remove heat. In the presence of this temperature difference between the interior and exterior of the tube, the heated vapor condenses on the outside of the tube. The condensate then flows downward and is measured to determine the amount of heat transferred. The temperature rise of the cooling water can also be used for that purpose, and the two determinations usually check within a few percent.

## Freon is tested

Initial tests with the rig were performed with smooth tubing specimens and water as the heat transfer medium to provide a basis of comparison for subsequent tests with different tube configurations and other heat transfer fluids. A number of the Freons will be tested, Milora said, but experiments with ammonia will await the construction of a larger device now in the planning stage.

Although the data gathering began only recently with Freon-114 and is not yet complete, Milora said the early tests have shown that tests with smooth tubes have obtained heat transfer coefficients of between 600 and 1,200 Watts/meters<sup>2</sup>/Kelvin per hour; while with a corrugated-surface tube, this figure was raised to 3,000. The hope is to develop a tube surface that will obtain a condensing coefficient of 6,000 and above with Freon-114, and much higher with good heat transfer fluids such as ammonia. As the rating is increased, the total capital cost for heat transfer equipment will decrease.

## Ocean as a source

The work currently is sponsored by the Geothermal Energy Division of

## YOUTH SERVICES

Boys' Clubs, Boy Scouts, Girl Scouts, Camp Fire Girls YWCA's and YMCA's throughout East Tennessee provide social and spiritual guidance to the youth of the area. Without these agencies, many of the young people of the area would be left on the streets, where crime would take its ultimate toll. With your United Way dollar these young people are taught how to adapt to social environments where health and sanity are the mainstays of life.



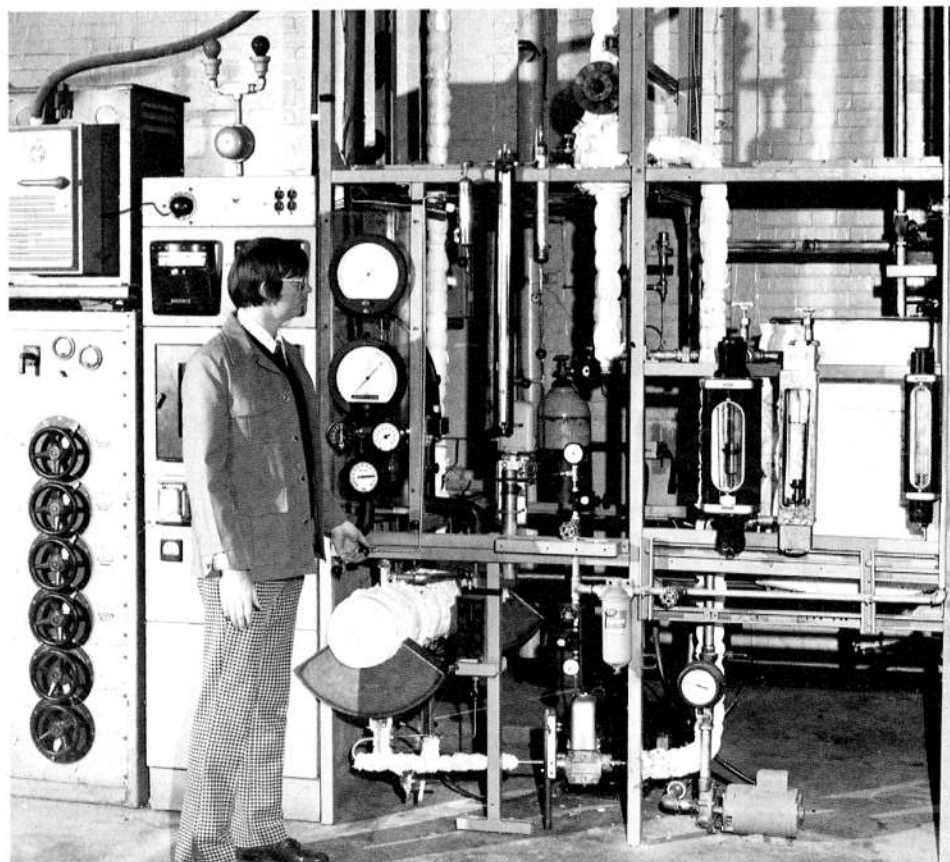
**TUBE SURFACE STUDY** — A variety of tube configurations is being studied by Stan Milora, seen above, and Richard Lyon to determine the optimum design for use with low temperature heat transfer power-production systems.

ERDA, but technology and hardware developed in the Cold Vapor Program also might have application in other power-production systems in which the heat supplies are at low temperatures but, if appropriately developed, could prove to be unending sources of energy. An example of such an unlimited source, Lyon pointed out, might be the ocean gradient system that would depend on the temperature difference between the ocean surface and depth to produce power.

"In the tropic ocean, for example, the surface water may get as hot as 26° C, while at a depth of 1,000 meters or so, the temperature is about 4° C," Lyon said. "ERDA is currently sponsoring work elsewhere aimed at taking advantage of this temperature difference by means of heat exchangers and a turbine built to operate in the ocean."

## PATENT GRANTED

To Wayne F. Johnson and William A. Walker, ORNL, and Thomas O. Tiffany, formerly of ORNL, for "Collection Ring for Use in Multiple-Sample Blood Fractionation Centrifugal Rotors."



**HEAT TRANSFER TESTS** — This experimental apparatus located in Building 9204-1 is being used by the Energy and Reactor Divisions for low temperature heat transfer measurements. Steve Combs, above, one of the designers of the rig, is responsible for its operation.

## NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost time accident through September 25.

Paducah .....	3 Days	20,000 Man-Hours
ORGDP .....	143 Days	3,342,964 Man-Hours
Laboratory .....	171 Days	3,585,975 Man-Hours
Y-12 Plant .....	98 Days	2,701,000 Man-Hours



## ET Cancer Research Center to expedite new techniques

Oak Ridge National Laboratory will participate with three other area institutions in the establishment of the East Tennessee Cancer Research Center to be located in Knoxville.

An affiliation agreement officially creating the ETCRC has been signed by the heads of ORNL, Oak Ridge Associated Universities, The University of Tennessee, Knoxville, and the Knoxville unit of the UT Center for the Health Sciences.

Planning for the center, which will have its headquarters in the IBM Building near Cedar Bluff Road, has been underway since 1972. The research work will continue to be conducted in the respective laboratories of the participating institutions.

Dr. Anthony Girardi, director of ETCRC, said coordination of research and patient care activities and educational programs for the public and for health-care professionals are primary goals of the center.

### Projects in progress

"There are many outstanding cancer research programs underway in Knoxville and Oak Ridge," he said. "Hopefully, the center can reduce the time between an important laboratory finding and its application in therapy and diagnosis."

Among significant projects in progress in the Knoxville-Oak Ridge area are studies on the role of nuclear medicine in cancer detection and diagnosis, radio-protective substances, tumor immunology, the genetics of cancer, chemical and viral carcinogens, cancer chemotherapy, nutrition and cancer, and projects aimed at providing life adjustment services to cancer patients and their families.

Girardi says he sees the role of ETCRC as being a coordinating office

and a stimulus for new ideas rather than an office that duplicates existing programs.

### Health-care facility

One of Girardi's goals is to work with the Area Health Education Center and UT Memorial Hospital in developing continuing education programs in tumor study for doctors, nurses and other health professions, and to help develop a model education and demonstration facility at UT Hospital.

"This unit could be used by personnel involved in the treatment and rehabilitation of cancer patients," he said. "It would represent the ultimate in cancer care, and from working in this facility health-care personnel would learn techniques which could be applied to their institutions."

An executive council, composed of top administrators of the four sponsoring institutions, is responsible for establishing goals, policies, plans and a budget for the center. Hilton A. Smith, UTK vice chancellor for graduate studies and research, is cancer center coordinator and chairman of the council.

### Funded by two sources

The center also has an advisory board of professionals and lay members and a scientific review committee to evaluate research proposals and aid in program development.

ETCRC is now funded by two major sources — the State of Tennessee through the UT Center for the Health Sciences, and a planning grant from the National Cancer Institute. The American Cancer Society, the Regional Medical Program and the Energy Research and Development Administration also have provided support for the center.

## David Stansberry named head of finance, budget at Paducah

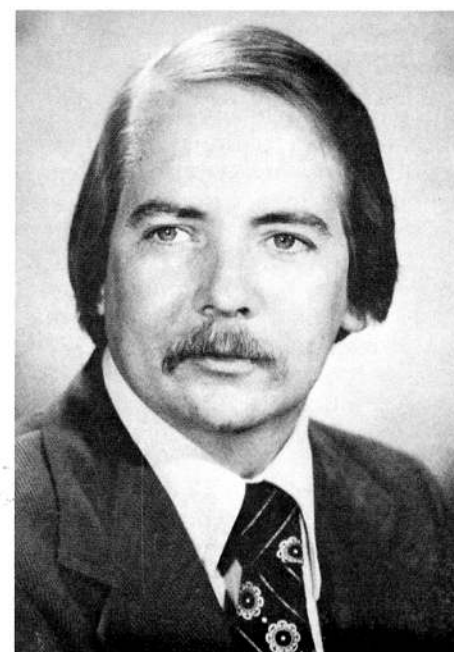
David L. Stansberry has been named head of the finance and budget department at the Paducah Gaseous Diffusion Plant, according to an announcement from Dave Barclay, superintendent of Finance and Materials Division.

Stansberry has been with Union Carbide 10 years, most of which was spent at the Oak Ridge Gaseous Diffusion Plant. A graduate of Tennessee Technological University, he is a native of Chattanooga, and recently transferred to Paducah.

Prior to joining Union Carbide, he was employed by the Chrysler Corporation Space Division and Bowser Briggs.

At ORGDP he was most recently in Engineering, and also worked in Cascade Operations, and as finance and budget liaison to the technical organizations; as well as ORGDP stores.

Married to the former Marilyn Brenda Dunlap, Stansberry lives at 754 West Jefferson, Paducah. They have two children.



David L. Stansberry

## ORNL's Bruce honored for volunteer efforts

More than 80 people attended a reception and dinner to honor Frank Bruce for his service as vice president for economic development with the Oak Ridge Chamber of Commerce recently. Bruce, associate director for administration at Oak Ridge National Laboratory, resigned the volunteer post which he had held for 10 years.



F. R. Bruce

Herman Postma, ORNL Director, was among those who spoke of Bruce's contributions as vice president of economic development, particularly in the area of recruiting new industry for the city of Oak Ridge.

"Frank has had the vision to see the immense potential of Oak Ridge to become a kind of center for technology in this area," Postma said.

A native of Beverly, Mass., Bruce joined the ORNL staff in 1943. He served in several positions in the Chemical Technology Division, as director of safety and radiation control for ORNL, and as associate deputy director. He has been associate director for administration since 1970.

## Recording for blind needs special readers

Readers with a knowledge of physics, chemistry, mathematics, or computer science are being sought by the Oak Ridge Unit of Recording for the Blind.

Studio hours are from 9 a.m. to 3 p.m. and 7 to 9 p.m. daily. A recording session to complete a reel of tape takes a little more than an hour.

Monitors are also needed to operate the recording equipment and watch for reading errors.

RFB is on Badger Road. The telephone number is Oak Ridge 482-3496.



**SLAUGHTER CHAIRS COMMITTEE** — Gerald M. Slaughter, Metals and Ceramics Division at Oak Ridge National Laboratory, has been elected chairman of the American Welding Society's Committee on Brazing and Soldering. Committee members, standing from left, are D. Wireman, Aerobraz Corporation; J. P. Broderick, Eutectic-Castoline Institute; M. N. Ruoff, General Electric Company; J. R. Bonnar, Handy & Harman; R. E. Ballentine and W. J. Reichenecker, Westinghouse Electric Corporation; C. R. Behringer, Western Gold and Platinum Company; D. J. Spillane, General Electric Company; W. B. Hampshire, Tin Research and K. Gustafson, Westinghouse-Hanford. Seated are A. H. Lentz, Reynolds Aluminum; J. F. Smith, Lead Industries Association; T. J. Olivera, American Welding Society; R. L. Peaslee, Wall Colmonoy Corporation; Slaughter; J. B. Long, Tin Research Institute and R. M. Evans, Battelle Memorial Institute.



## Motion picture section at ORNL provides Division-wide services

"Roll sound, roll camera — action," are expressions commonly used in motion picture and television studios, but they may also be heard in a national research and development laboratory, in a facility involved in the production of weapons components, or in a gaseous diffusion plant. This was the case recently when the motion picture section of ORNL's Photography Department filmed some of the final scenes for a thermal effects research movie at the ORNL Aquatic Ecology Laboratory.

The motion picture section has been in existence for several years. It is best known for its production of "The Bioengineers," a 14-minute film made at ORNL, which has won numerous national and international awards. The crew includes Fleming Reeder (ORNL consultant), John Ridley and James Worrel. The section operates as part of ORNL's Information Division.

The sound and color film which the section is currently working on deals with the discharges from power plants and the effects they have on aquatic life. The film is being produced for ERDA, and is designed for showing to a popular-level audience. It touches on work being conducted at several locations, including Pilgrim I Nuclear Power Station at Plymouth, Mass., and the two power reactors at Turkey Point in southern Florida. Special emphasis is placed on related research at ORNL.

Services offered by the section are available to individuals and groups throughout the Nuclear Division. The crew has the capability for producing high quality films for most scientific purposes.

Audio-visual services offered by the section include:

- \*Popular-level motion pictures for television and/or normal release through the ERDA Film Library;
- \*Technical motion pictures for release through the ERDA Film Library;
- \*Photodocumentation of various research projects to reinforce or supplement lectures or other oral presentations;

\*Short films for use at conferences in Oak Ridge, Paducah, or other installations and governmental agencies;

\*Photometric studies of fast-moving objects by the use of high-speed cameras;

\*Production of "finished video films" for cassette presentation or regular television viewing, with the original shot on film and later transferred to video tape;

\*Computerized and regular animation designed by the section and executed by outside firms; and

\*Other specialized applications as may be appropriate.

The thermal effects research film will be completed in late November, and the crew will then be ready for another major effort that can be meshed with their shorter projects. For additional information concerning the section's services, or for a list of films which were produced by the group and are available through ERDA's Film Library, contact Fleming Reeder, extension 3-6893; or Ward Bandy, supervisor of Photography at 3-6371.

### RIDES-RIDES-RIDES

#### Y-12 PLANT

JOIN CAR POOL from Papermill Road exit, I-40, to Biology or North Portal, straight day. Mike McGinnis, plant phone 3-5881, home phone Oak Ridge 482-1163.

#### UNITED GIVING

Altogether is the way it goes. A little from each adds up to a lot of service to mankind!

### Next Issue

The next issue will be dated **October 16. The deadline is October 8.**



FILMING AT AEL — Special emphasis of the thermal effects film will be on research conducted in the Aquatic Ecology Laboratory at ORNL. Present for the recent filming at AEL were C. R. Richmond, associate director for Biomedical and Environmental Sciences; Stanley I. Auerbach, director, Environmental Sciences Division; C. C. Coutant, head of the ORNL Thermal Effects Program; and Fleming Reeder, director of the motion picture crew. Mack Stubbs, Environmental Sciences, is shown in the background.

## COMPANY Service

20 25 30

#### ORNL

##### 30 YEARS

Frederick Nelson, Chemistry; William R. McKnight, Operations; Chester L. Oxford, Finance and Materials; Charles A. Golden, Health Physics; Douglas S. Billington, Metals and Ceramics; Wayne K. Henderson, Chemical Technology; Doyle M. Davis, Health Physics; James C. Ratliff, Operations; Harold C. Davis, Plant and Equipment;

Dowsie Trammel Jr. and Luther M. Sutton, Employees Relations; Robert S. Todd, Plant and Equipment; James W. Cunningham, Instrumentation and Controls; Harvey L. Smith, Laboratory Protection; Chester Merrifield, Plant and Equipment, and Malcolm Richardson, Reactor.

##### 25 YEARS

George A. McBee, E. Ray Wells, Joe A. Keathley, Joseph M. Skorski, Stephen I. Kaplan, Leroy West, Floyd E. Patterson, Herbert W. Hoffman, Clarence K. McGlothlan, Alf T. Connelly, Ruby E. Bass, Preston G. Herndon Jr., Joe B. Henry, Richard J. Beaver, Woodford F. Spencer, Warren C. Farris and Melvin L. Tobias.

##### 20 YEARS

Nancy D. Morris, Robert P. Beard, John A. Harvey, Hugh J. Metz, George S. Dykeman Jr., Dolores H. Dunn, Peter P. Holz, Eugene J. Lawrence, Thomas W. McKinley Jr., Vern A. McKay, Virginia B. Farris and Joe C. Richter.

#### ORGDP

##### 30 YEARS

Eugene L. Wooten, machine shop; Benjamin C. Morton, U-235 separation department; Horace K. Tye, shop services; Joe E. Leinart Jr., Joseph E. Smith, U-235 separation department; Steven Woods, shop services; Robert J. Campbell, isotope analysis department; John R. Wright, janitors department; Arrants Alexander, Ernest A. Taylor Jr. and Charles E. Rose, U-235 separation department; Luther Acres and Ralph E. Thompson, utilities operations department; Alvin

L. Sharp, chemical operations administration; Howard J. Rash, SS material handling; and Joseph A. Walker, salvage and scrap materials department.

##### 25 YEARS

David Gray.

##### 20 YEARS

Mary M. King.

### Environmental seminar

The relationship of man and his need for energy to the quest for environmental quality will be the theme of a popular-level presentation by Eugene P. Odum, director of the Institute of Ecology at the University of Georgia, on Wednesday, October 8.

Odum will speak on the topic, "Energy Demands and the Environment," at 7:30 p.m. in the auditorium of the New American Museum of Atomic Energy. His talk, open to the public, is sponsored by the Environmental Sciences Division at Oak Ridge National Laboratory.

Odum, a scientist and teacher, has been one of the main contributors to the study of ecosystems, emphasizing their functional attributes rather than their structural characteristics. His research has focused on field experimentation in relatively simple systems, including abandoned fields and salt marshes.

He is the author of four books, more than 100 papers in professional journals, and numerous other articles on ecological themes. Two textbooks written by Odum are used throughout the world and have been translated into eight foreign languages.

Odum has also lectured widely on the social relevance of ecological principles and, through his public appearances and writing, has sought to establish an ecological perspective for evaluating energy alternatives.



SHOOTING AT TURKEY POINT — The ORNL motion picture crew took several shots of the air boats patrolling the canal at Turkey Point power plants in Homestead, Fla., for their film on thermal effects research. From left are James Worrel, John Ridley and Fleming Reeder.





**FIRE PREVENTION COMMITTEE** — The Oak Ridge Gaseous Diffusion Plant gears for Fire Prevention Week, set October 5-11. Seated, from left, are Norman E. Sparks, Shirley M. Osborne, John D. Hoogesteger, chairman; Bernard H. Thompson, Dode S. Gordon and Richard W. Hayes. Standing are Bill I. Wyatt, Donald B. Shupe, Fay B. Duncan, Clayton B. Tolliver, Burris N. Strunk, Paul F. Shorten, James R. Hutton, William D. Harman III, and Larry E. Wheeler. Not pictured are Tony Angelelli, Sewell Brown, James H. Harris and George B. Kearns.

## Dew, Martin, Reesor

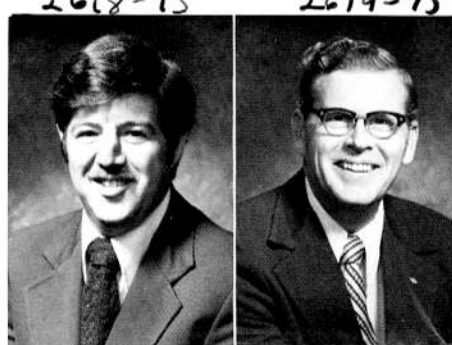
Two promotions in the Plant and Equipment Division and one in Metals and Ceramics Division have been announced at Oak Ridge National Laboratory.

Both Murrel R. Dew and Billy D. Martin have been promoted to planner and estimator in Plant and Equipment Division. Dew, who was a carpenter prior to his promotion, joined the Nuclear Division last year after being self-employed as a general contractor. Born in Norris, he currently resides there on Hillvale Road with his wife, Lynda, and their three children.

Martin, a native of Nashville, was a pipefitter before his promotion. A 23-year employee of the Nuclear Division, he was with ORGDP before joining the Laboratory staff. He and his wife, Sue, and their two daughters make their home at 514 Crestwood Drive, Clinton.

Harrell E. Reesor, Metals and Ceramics Division, has been promoted from science technologist to staff engineer. Reesor has been with Union Carbide 15 years, beginning in the machine shop at Y-12. A native of Jonesboro, Ark., he is a senior at The University of Tennessee. He and his wife Bonnie, employed in Finance and Materials Division at ORNL, have four children and live at 510 Westbury Drive, Clinton.

## promoted at ORNL



M. R. Dew B. D. Martin



H. E. Reesor

## AREA WATER SAFETY

Swimming in the East Tennessee streams and lakes is a predominate summertime sport. Through the American Red Cross, free swimming instructions are available in almost all of our area.

## Savings Plan-Personal Investment Account

### Recent unit values:

	Fixed Income Fund	UCC Stock	Equity Investment Fund
August 73	10.0000	34.7688	10.0000
December 73	10.2444	31.8170	9.3602
December 74	11.0438	40.3009	6.4354
May 75	11.4275	63.8335	8.4588
June 75	11.5025	59.5729	8.7039
July 75	11.5846	61.4372	8.0111
August 75	11.6655	59.5430	7.7346

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 8.55% for 1975. Union Carbide stock values are the average cost of stock purchases during the month plus brokerage charges. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. Dividing the total value by the number of units in the fund establishes the month's unit value — and the price at which new units are added that month.

## Calendar of EVENTS

### TECHNICAL October 5-10

International Conference on Radiation Damage in Metals: Riverside Motor Lodge, Gatlinburg.

### October 6

Lab-Wide Seminar: "Future Applications of the HTGR," Peter Fortescue, Advanced Systems Development, San Diego, Calif. Central Auditorium, Building 4500N, 3 p.m.

### October 7

American Society of Non-destructive Testing Meeting: "Ultrasonic Frequency Analysis," Lazlo Adler, Physics Department, University of Tennessee. China Palace, social hour 6:30 p.m., dinner 7, program 8.

### October 13-15

Chemical Technology Division Information Meeting: Oak Ridge National Laboratory.

### October 13-16

Analytical Chemistry Conference in Nuclear Technology. Riverside Motor Lodge, Gatlinburg, Tenn.

### COMMUNITY October 10-11

Unitarian Handicraft Fair: Unitarian Church, Turnpike and Robertsville Road, Oak Ridge. October 10 hours: 10 a.m. to 4 p.m. and from 6 to 8 p.m. October 11: 10 a.m. to 4 p.m.

## PATENTS GRANTED

To Walter J. Lackey and John D. Sease, both of ORNL, for "Means for Effecting Fluidization in Pyrolytic Carbon Coating Processes."

To Klaus H. Becker, Fred F. Haywood, Philip T. Perdue and John H. Thorngate, all of ORNL, for "Fast-Neutron Solid-State Dosimeter."

To James B. Condon, Philip S. Lewis Jr. and Jonathan S. Bullock, all of Y-12, for "Process for Electroslag Refining of Uranium and Uranium Alloys."

## Huff represents ORNL on DHEW subcommittee

James Edward Huff, Information Division at Oak Ridge National Laboratory, will serve as the Laboratory's representative on the Toxicology Information Subcommittee of the Department of Health, Education and Welfare's Committee to Coordinate Toxicology and Related Programs.

The primary function of the subcommittee is to collect, store, and disseminate pertinent information with respect to toxicological and related activities within DHEW. ORNL was given member status on this subcommittee because of its heavy involvement in these areas.

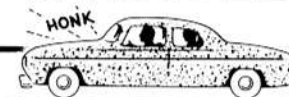


J. E. Huff

Huff is director of the biomedical sciences section of the Information Center Complex. The section includes the biomedical studies group, the data extraction and analysis group, the Environmental Mutagen Information Center, the Environmental Teratology Information Center and the Toxicology Information Response Center. Huff has made significant contributions to the development of information systems in the biomedical sciences, particularly to the analysis of such information in preparing evaluative state-of-the-art reviews.

A native of Philadelphia, Penn., Huff received the B.S. and M.S. degrees from the Philadelphia College of Pharmacy and Science, and his Ph.D. in bionucleonics-pharmacology from Purdue University. He joined the Laboratory staff in 1972.

## WANTED



### Y-12 PLANT

CAR POOL MEMBER from Fountain City to North or East Portal, straight day. John Hurst, plant phone 3-7827; home Knoxville 687-9360.

JOIN or FORM CAR POOL from Middlebrook Pike - Francis Road area, Knoxville, to North or Central Portal, straight day. Steve Shipley, plant phone 3-7776, home phone Knoxville 693-0379.

RIDE from Powell area, Knoxville, to North Portal, 8 a.m. shift. K. Cook, plant phone 3-5713, or home phone 947-1154.

RIDER wanted from North Knoxville area to East, North or Central Portal, straight day. J. F. Baker, plant phone 3-5935; home Knoxville 637-1769.

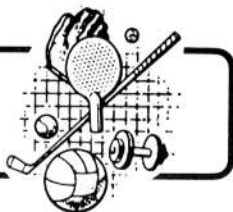
### ORGDP

CAR POOL MEMBER from South Clinton or Edgemoor Road area to Portal 8, 8 - 4:30 p.m. shift. Richard Faulkner, plant phone 3-3175, home phone Clinton 457-3051.

RIDE or will JOIN CAR POOL from the Farragut area, Knoxville, to Portals 2, 3 or 4, straight day. Don Muldrew, plant phone 3-9326, home phone Knoxville 966-8306.



## RECREATIONOTES



### Y-12 BOWLING

The Roses'n Thorns lead the Y-12 Mixed League with 11 wins, five losses so far. The Goofers and Rollers are tied for second place. Billie Greeley set the lanes afire recently, posting a single of 222 scratch, a series of 508.

The Badgers are bare leaders in the C League as rolling gets tight. Bill Ladd's 627, Jim Hummel's 612 are high scratch series thus far in league standings.

The Ridgers are tied with the Splinters for first slot in the Classic League. The Ridgers posted a 3084 series recently! Bill Patrick's 683 handicap series stands high in early rolling.

### ORNL BOWLING

The Alley Rats turned it on recently, with Charlie Thompson leading the pack, with games of 226, 207 and 186 for a 619 total! The Remkeys stay in lead, as W. D. Burch rolled a 213 recently for the top team.

The ORNL Ladies Bowling League puts the Mousechasers ahead with a perfect slate thus far in league standings. Brena Stevens rolled a 549, 639 series recently.

Bill Coghlan rolled a 547 scratch series; Edith Duckworth a 527, to pace bowlers in the Carbide Family Mixed League. The Challengers take a scant lead in standings.

# United Way



Thanks to you it works... **FOR ALL OF US**

### PADUCAH SETS GOLF MATCH

The annual Village Greens Mixed Scrabble will be held at the Kentucky Dam Village greens, Saturday, October 11. The "fun" tournament will include any Carbilder in the vicinity. (Oak Ridgers, take note... if you are visiting in the area during that week, welcome!) Entries must be in by noon, October 8. The Recreation number in Paducah is 444-6312, extension 368.

Oak Ridge entries will be given their tee-off times by October 9.

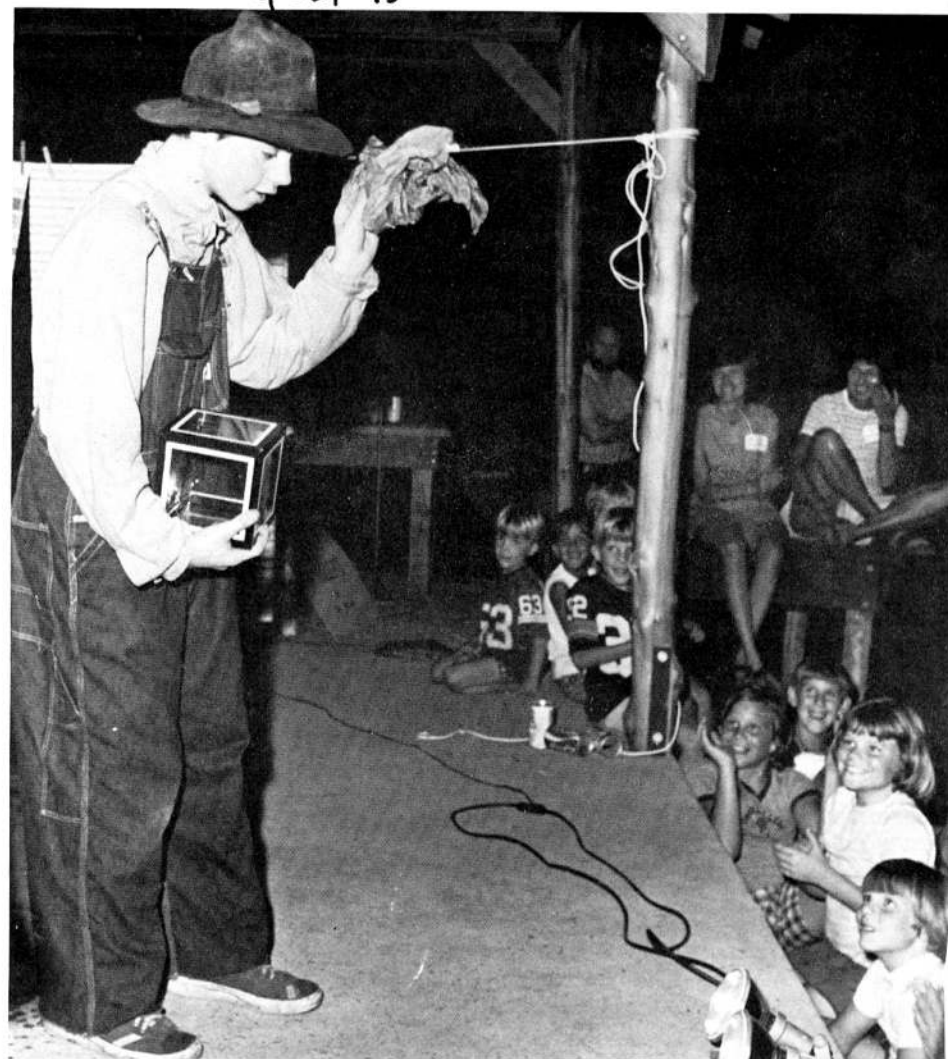
A "car" will be awarded in the nearest hole-in-one contest. The longest drive hitting in the fairway will also earn an award.

Scrabble play involves both men and women players.

Get your registration in now.



**HEALTHY SWING** — Larry Heaverin, Paducah Plant, takes a healthy swing at the first tee in preparation for the annual Village Green Mixed Scrabble set for October 11.



**PICNIC ENTERTAINER** — After-dinner entertainment at ORNL's Physics Division picnic will include David Fee (son of Gordon, Reactor Division), the "Hillbilly Magician." David's act will be the special children's attraction. The Hollow Field Mountain Ball and Chain Gang will furnish music for the picnic which will be held October 4 at Clark Center Recreation Park.

### ORGDP BOWLING

The Spotters stand heads above the crowd in the ORGDP Women's League, as the Payoffs assume a second spot. Elaine Griffies rolled a 198 scratch game, 536 series; Mary Foley took a 228 handicap single; 605 series.

The K-25 Tuesday League puts the Mishaps on top by a good four and one-half points. Sewell Brown rolled hot in singles recently, posting a 235 scratch, 249 handicap game. L. Luecke rolled a 577 scratch series; T. T. Jones a 653 handicap!

The Wednesday League sees the Sues Sooners on top, after rolling a 3054 series recently. Roy Dukes rolled a 244 scratch game.

### BASIC PISTOL COURSE

A basic pistol school for beginning adults will begin today at the Oak Ridge Sportsmen's Association. It will consist of seven classes, and all firing will be done with the .22 calibre pistol. Registration is \$5 for non-ORSA members and \$3 for members. Class size is limited to 24 students. Additional information may be obtained from Jim Brewer, extension 3-3031, or Oak Ridge telephone 483-1706.

### PADUCAH GOLF WINNERS

The Birdies, captained by Randy Harris, finished seven points over Jake Piercy's Eagles, as the Paducah league season ended. The Wun-Putts, Jay Collins; the Slammer, Phil Brown; the Long-nokers, Charles Turok, and the Chippers, Bill Higgins, all finished in that order.

The winning Bridies include Harris, Arv Gorline, Bob Douglas, Forest Edwards, Larry Fenwick, Channing Hale, Jim Harbison, Charles Long and John Tietyen.

### PADUCAH PHOTO EXHIBIT

Paducah shutter-bugs will have the chance to exhibit in competition their photographic skills, in both black and white and in color categories, which include portraits, pictorial, nature and wildlife and open. Entry deadline is October 31, and the entries will be displayed for two weeks in the Plant, then judged by a panel of professionals and amateurs. Prizes will be in each category and a "best-of-show." Rules and regulations may be obtained from a divisional representative or from the recreation department at the Paducah Plant.

### ORION names Fields director for 1976

David Fields has been elected director of the Oak Ridge Isochronous Observation Network. He has a Ph.D. in physics from the University of Wisconsin, and is an applied physicist in the Computer Sciences Division at ORNL.

ORION has as its primary objective the establishment and maintenance of a network of observation stations and an organization of scientists, engineers and qualified members of the public for the purpose of obtaining and analyzing direct observational data on the phenomenon of UFOs, through the use of various optical, electromagnetic and auditory devices. ORION was founded in April, 1974.

Other officers elected were Kit Haaland, ORNL, assistant director; John Bigelow, ORNL, treasurer; Earl Price, Y-12, first secretary; and Karen van Rij, second secretary.



## Practical advice on cholesterol

T. A. Lincoln, M.D.

"You're in good health but you have a high cholesterol and triglyceride level in your blood. You are much more vulnerable to coronary heart disease. I strongly recommend that you go on a special diet to try to lower these blood fats to a more normal level." Thousands throughout the country are now given this advice by their physicians after they have received periodic physical examinations. Their reactions vary from panic and anxiety to indifferent resignation. What is a reasonable course to follow?



First and foremost is the need to consider the influence of other risk factors. A person who has a high serum cholesterol and/or triglyceride level, called a hyperlipidemia, is at increased risk from coronary heart disease, even though everything else is normal. However, if he has other risk factors, this danger is greatly increased.

These additional factors include: (1) high blood pressure; (2) tobacco smoking; (3) diabetes or an impaired glucose tolerance; (4) a conscientious, hard-driving, perfectionistic personality, the so-called Type A; (5) high uric acid level; (6) family history of coronary heart disease, especially if before age 50; (7) lack of regular exercise; and (8) obesity. When a person has more than one risk factor, his vulnerability goes up rapidly.

### Control of blood fats

The evidence that modification of these risk factors improves a person's prognosis is not as impressive as physicians in preventive medicine would like. Several prospective studies are underway and hopefully, better support will be forthcoming. The best evidence relates to the control of high blood pressure but there are several studies that suggest that control of blood fats does improve the long-range outlook. Logic is clearly on the side of those who recommend doing something about modifying risk factors. Cynics who insist on waiting for incontrovertible evidence are missing a major point. Control of risk factors is almost always associated with better health and the rewards occur promptly, even though control may not absolutely guarantee a longer life.

If the individual with a hyperlipidemia is overweight, and such a person usually is, weight control is frequently all that is required. Reducing the intake of a few saturated fat or high sugar items in the diet while remaining overweight makes no sense. It is a little like trying to reduce the weight of a 747 jet airplane by emptying out the ash trays.

It is pathetic to hear the complaints of individuals who describe how they followed their low fat diet carefully, yet neither their cholesterol level nor their body weight has changed. Even more ludicrous are people who complain that they have greatly

reduced their intake of carbohydrates and alcohol, yet their weight hasn't decreased and their triglyceride level remains high. If either of these diets were followed carefully, weight loss would occur. An individual who was already at his ideal weight when he started might require careful manipulation of other portions of the diet in order to prevent undesirable weight loss.

### Meticulously recorded

Drs. F. W. Ashley and W. B. Kannel analyzed the results of a 16-year followup of 5,209 adults in the Framingham, Mass., study of the natural history of coronary heart disease. Eighty-five percent of these adults had a complete examination every two years when the status of risk factors was meticulously recorded. They found close correlations between changes in weight and changes in cholesterol and blood pressure. Using these data and a technique called multiple logistic equations, they predict that for each 10 percent reduction in weight of men, there should be a 20 percent decrease in the incidence of coronary attacks, and for each 10 percent increase in weight, there should be a 30 percent increase in attacks. These effects are less pronounced in women and people over age 60. The major impact of either weight loss or gain is on blood pressure or cholesterol. If both of these are normal, weight change is of considerably less importance.

Before complaining that the company cafeteria should have special low lipid diet items, or that your wife refuses to make a special diet for you, look at your weight! Losing weight doesn't require a special diet. It does require a basic decision. All one has to do is to eat less! The only important measure of your dieting success is what your scale tells you. If you refuse to lose weight, don't kid yourself that cutting out a few saturated fat or high sugar items and reducing your alcohol intake will have much effect.

### Other risk factors

Once you get your weight down, have your blood lipids checked again. Unless they are still markedly elevated, there probably is little reason for embarking on a more detailed restriction of specific diet items. If you are helpless and cannot control your weight, you probably won't be successful in rigidly controlling specific fat or carbohydrate items. At least control the other risk factors, especially your blood pressure. If you can't succeed at anything, get your affairs in order and relax. Cardiologists appreciate the business and can usually pull you through if you survive the first 48 hours after your heart attack!

The comment, "Why should I do without the things I like in order to do without them longer?" seems logical. However, when the chest pain hits, most people are powerfully unwilling to accept the fact that they made a conscious choice years earlier and their time is up.

## NUCLEAR DIVISION RETIREES

Six employees retired from Y-12 at the end of September.

Leon T. Coleman, electrical and electronics, has 27 years of company service. He lives at 942 Sevier Street, Harriman.

Leeman G. Pack, dispatching, lives at Route 6, Harriman. He came to Y-12 in 1945.



L. T. Coleman  
75-144



L. G. Pack  
75-201



J. F. Paschall



E. A. Powell

James F. Paschall, stores department, lives at 404 Greenwood Street, Clinton. He joined Union Carbide in 1954.

Elwood A. Powell joined Union Carbide in 1951. He lives at 441 Hicks Street, Clinton.



J. C. Owens

James C. Owens lives near Maynardville. He came to Y-12 in 1951.

Mabel Stapleton, chemical services, lives at 220 North Purdue Avenue, Oak Ridge. She has been in Y-12 since 1946.



J. H. Anderson



E. A. Henderson

John H. Anderson, Fabrication and Maintenance Division at the Oak Ridge Gaseous Diffusion Plant, retired at the end of September, marking more than 31 years with UCC. He lives at 100 Tomlinson Road, Oak Ridge.



K. G. Shugarts

Eddis A. Henderson, electrical maintenance, ended more than 23 years with UCC at the end of September. He lives at 136 East Wadsworth Circle, Oak Ridge.

Kenneth G. Shugarts, Engineering Division, will retire at the end of October. He has been with UCC since 1962, and lives at 108 Principia Lane, Oak Ridge.



G. H. Callaway



H. R. Craft

Two Oak Ridge National Laboratory employees retired at the end of September.

Groat H. Callaway, a custodial foreman in Operations Division, ended more than 24 years' company service. Callaway lives on Glastonbury Road, Knoxville.

Hume R. Craft took early retirement after 30 years as a Nuclear Division employee. Craft was an applied health physicist in the Health Physics Division. His home is at 103 Verbena Road, Oak Ridge.

### ADULT ELECTRONICS COURSE

A new course in Industrial Electronic Technology is now being organized, with registration set for 7 p.m. October 24 at the Central High School in Wartburg. The class meets twice a week from 6:30 until 10:30 p.m.

A three-year course, it is divided into six semesters, and tuition is \$20 per semester. The course is approved for a sharing of cost under Union Carbide's Educational Assistance Program. It includes basic and advanced electronics, servo systems, sonics, communications (AM, FM, SSB, FSK), radar, microwave multiplexing, math, television transmitters and receivers, operation and repair of electronic test equipment.

Anyone interested in signing up for the course or in need of additional information should call T. A. Hickman, instructor, on extension 3-5445.

### PATENT GRANTED

To Charles E. Harless and Ward G. Taylor, both of Paducah Gaseous Diffusion Plant, for "Bellows-Forming Apparatus."



PH 75-2614

PH 75-2550



L. G. Acres



C. L. Baldwin

PH 75-2602



L. L. Murray

## NUCLEAR DIVISION NEWS

UNION CARBIDE CORPORATION  
NUCLEAR DIVISION

James A. Young, Editor  
Accredited Business Communicator  
Ext. .... 3-7100  
Ruby Miller, Assoc. Editor  
Ext. .... 3-6421  
Keith Bryant, Paducah  
Bell .... 369  
Doug Carter, ORGDP  
Ext. .... 3-3434  
— Member —

INTERNATIONAL ASSOCIATION OF  
BUSINESS COMMUNICATORS

Office  
Post Office Box Y  
Oak Ridge, Tenn. 37830

Nuclear Division children among  
merit scholarship semifinalists

*Editor's Note — Any Nuclear Division employee whose child is a National Merit semifinalist and is not included in the following article is invited to contact the editor, 3-7100, or associate editor, 3-6421.*

Several children of Nuclear Division employees have received the academic honor of being selected as National Merit Scholarship semifinalists. The scholarships which will consist of about 2,800 four-year grants and 1,000 one-time grants to be distributed throughout the United States, will be awarded next spring.

Semifinalists are listed below according to the school which they attend.

Oak Ridge High School — Mike Corbett, son of Bernard Corbett (Operations Division at ORNL); Janie Gambill, daughter of Everett Gambill (Technical Division at Y-12); Patricia Johnson, daughter of Neil E. Johnson (consultant with ORNL's Thermo-nuclear Division); Donald H. Ludemann, son of Carl Ludemann, (Physics Division at ORNL); David McCoy, son of Samuel E. McCoy (Physical Testing at Y-12); Ronald Morgan, son of Chester S. (ORNL's Metals and Ceramics) and Helene Morgan (consultant with ORNL's Information Division); Thomas Nephew, son of Edmund A. Nephew

Three promotions  
listed at ORGDP

Three promotions are announced at the Oak Ridge Gaseous Diffusion Plant.

Lena Gibbs (Jo) Acres has been named an associate inspection engineer in the Laboratory Division. A native of Logansport, Ind., Mrs. Acres worked eight years in the Y-12 Plant, and has worked as an accounting clerk, department secretary and engineering assistant. She is a Certified Professional Secretary, and is a graduate of Knoxville Business College, has attended The University of Tennessee, and holds an associate of science degree from Roane State Community College.

She worked at Management Services, Inc., in Oak Ridge before joining Union Carbide.

She and her husband, Samuel J. Acres Sr., live at 1154 Mayflower Road, Knoxville. They have two sons.

C. L. Baldwin has been promoted to a materials foreman in the Finance, Materials and Services Division. He was born in Rockwood and has been at ORGDP more than 30 years, working as a materials requisitioner and engineering aide.

He lives at Route 2, Rockwood, with his wife, the former Betty Walker. They have a daughter and a son.

Lloyd L. Murray has been made a maintenance foreman in the Fabrication and Maintenance Division. A native of Jellico, he has been at ORGDP six years, and worked at Y-12 seven years. Prior to joining UCC, he was employed at Cape Kennedy, Fla.

Mrs. Murray is the former Hannah Mae Douglas, and the couple lives at 818 Alma Lane, Kingston. They have two sons and a daughter.

## QUESTION BOX

(Continued from page 1)

**QUESTION:** Why is the program "Working with People" restricted to certain employees? Since it is paid for by taxpayer's money, why is it not open for all employees?

**ANSWER:** The "Working with People" program has been limited to a general grouping of employees for a good reason. This particular program was designed to meet a specific problem, namely, the need for greater understanding of the individual employee by the supervisor. Since it is directed at the supervisor, it would not be as meaningful to employees who do not supervise others.

As with any training program, consideration must be given to achieving the maximum benefit for each dollar spent.

**QUESTION:** How many black women hold supervisory positions, other than foreman, in the Nuclear Division?

**ANSWER:** On August 1, 1975, there were five black women supervisors of hourly workers (including one general supervisor) and no other black women supervisors in the Nuclear Division. There are a total of 44 women supervisors including 18 who supervise hourly workers. This table shows the growth pattern of women supervisors in recent years.

Year	No. Women Supervisors	Minority Women Supervisors	Percent of all Supervisors who Are Women
1971	5	0	0.2
1972	15	1	0.8
1973	19	2	1.0
1974	33	3	1.6
1975	44	5	2.0

**QUESTION:** I wonder if Union Carbide officials have ever considered how much could be saved by not sending so much written material to the home from the plants ... so much that's not important, some not even read.

**ANSWER:** Aside from checks and related mailings from the paymaster, the following items were mailed to all Nuclear Division employees in 1974: *Nuclear Division News* - 25 issues; *Union Carbide World* - 11 issues; *Backgrounders* - four; *Benefit Plan Booklets* - four; *Family Safety Magazine* - four; *Safety Booklet* - one; *UCC Annual Report* - one; and *Prospectus (PIA stock purchasers)* - one.

In addition to these mailings, individual plants have mailed a limited number of items which they felt would be of interest to their employees. We hope that most employees are interested in keeping abreast of developments in the Nuclear Division and in UCC. Comments from others would be welcome.

## BONDS BEST BUY

U. S. Savings Bonds are easily collected through payroll savings. The bonds amass while you barely miss the money, then collect interest after they come into your possession. Simple, isn't it?



## UNION CARBIDE CORPORATION

NUCLEAR DIVISION  
P. O. BOX Y, OAK RIDGE, TENNESSEE 37830

ADDRESS CORRECTION REQUESTED

BULK RATE  
U.S. Postage  
PAID  
Union Carbide  
Corporation